meeting the requirements of §1918.23 may be used.

(b) Each side of the gangway, and the turntable, if used, shall have a hand rail with a minimum height of 33 inches (.84 m) measured perpendicularly from rail to walking surfaces at the stanchion, with a midrail. Rails shall be of wood, pipe, chain, wire, rope or materials of equivalent strength and shall be kept taut always. Portable stanchions supporting railings shall be supported or secured to prevent accidental dislodgement.

(c) The gangway shall be kept properly trimmed.

(d) When a fixed flat tread accommodation ladder is used, and the angle is low enough to require employees to walk on the edge of the treads, cleated duckboards shall be laid over and secured to the ladder.

(e) When the gangway overhangs the water so that there is danger of employees falling between the ship and the dock, a net or suitable protection shall be provided to prevent employees from receiving serious injury from falls to a lower level.

(f) If the foot of a gangway is more than one foot (.30 m) away from the edge of the apron, the space between them shall be bridged by a firm walkway equipped with a hand rail with a minimum height of approximately 33 inches (.84 m) with midrails on both sides.

(g) Gangways shall be kept clear of supporting bridles and other obstructions, to provide unobstructed passage. If, because of design, the gangway bridle cannot be moved to provide unobstructed passage, then the hazard shall be properly marked to alert employees of the danger.

(h) Obstructions shall not be laid on or across the gangway.

(i) Handrails and walking surfaces of gangways shall be maintained in a safe condition to prevent employees from slipping or falling.

(j) Gangways on vessels inspected and certificated by the U.S. Coast Guard are deemed to meet the requirements of this section.

§1918.23 Jacob's ladders.

(a) Jacob's ladders shall be of the double rung or flat tread type. They shall be well maintained and properly secured.

(b) A Jacob's ladder shall either hang without slack from its lashings or be pulled up entirely.

(c) When a Jacob's ladder is used as the means of access to a barge being worked, spacers (bumpers) shall be hung between the vessel, barge, or other structure to which the barge is tied alongside, or other equally effective means shall be provided to prevent damage to the bottom rungs of the ladder.

(d) When a Jacob's ladder is being used so that there is a danger of an employee falling or being crushed between the vessel, barge, or other structure (pier), suitable protection shall be provided.

§1918.24 Fixed and portable ladders.

(a) There shall be at least one safe and accessible ladder for each gang working in a single hatch. An effective means of gaining a handhold shall be provided at or near the head of each vertical fixed ladder. No more than two ladders are required in any hatch regardless of the number of gangs present.

(b) When any fixed ladder is visibly unsafe (or known to be unsafe), the employer shall identify such ladder and prohibit its use by employees.

(c) Where portable straight ladders are used, they shall be of sufficient length to extend three feet (.91 m) above the upper landing surface, and be positively secured or held against shifting or slipping. When conditions are such that a straight ladder cannot be used, Jacob's ladders meeting the requirements of §1918.23 may be used.

(d) For vessels built after July 16, 2001, when six inches (15.24 cm) or more clearance does not exist behind the rungs of a fixed ladder, the ladder shall be deemed ''unsafe'' for the purposes of this section. Alternate means of access (for example, a portable ladder) must be used.

(e)(1) Where access to or from a stowed deckload or other cargo is needed and no other safe means is available, ladders or steps of adequate strength shall be furnished and positively secured or held against shifting or slipping while in use. Steps formed by the

cargo itself are acceptable when the employer demonstrates that the nature of the cargo and the type of stowage provides equivalent safe access.

(2) Where portable straight ladders are used they shall be of sufficient length to extend at least three feet (.91 m) above the upper landing surface.

(f) The following standards for existing manufactured portable ladders must be met:

(1) Rungs of manufactured portable ladders obtained before January 21, 1998 shall be capable of supporting a 200-pound (890 N) load without deformation.

(2) Rungs shall be evenly spaced from nine to sixteen and one-half inches (22.9 to 41.9 cm), center to center.

(3) Rungs shall be continuous members between rails. Each rung of a double-rung ladder (two side rails and a center rail) shall extend the full width of the ladder.

(4) Width between side rails at the base of the ladder shall be at least 12 inches (30.48 cm) for ladders 10 feet (3.05 m) or less in overall length, and shall increase at least one-fourth inch (0.64 cm) for each additional two feet (0.61 m) of ladder length.

(g) Portable manufactured ladders obtained after January 21, 1998 shall bear identification showing that they meet the appropriate ladder construction requirements of the following standards:

(1) ANSI A14.1–1990, Safety Requirements for Portable Wood Ladders;

(2) ANSI A14.2–1990, Safety Requirements for Portable Metal Ladders;

(3) ANSI A14.5–1992, Safety Requirements for Portable Reinforced Plastic Ladders.

(h) Job-made ladders shall:

(1) Have a uniform distance between rungs of at least 12 inches (30.48cm) center to center;

(2) Be capable of supporting a 250-pound (1,112 N) load without deformation; and

(3) Have a minimum width between side rails of 12 inches (30.48 cm) for ladders 10 feet (3.05 m) or less in height. Width between rails shall increase at least one-fourth inch (0.64 cm) for each additional two feet (0.61 m) of ladder length.

(i) The employer shall:

(1) Maintain portable ladders in safe condition. Ladders with the following defects shall not be used, and shall either be tagged as unusable if kept on board, or shall be removed from the vessel:

(i) Broken, split or missing rungs, cleats or steps;

(ii) Broken or split side rails;

(iii) Missing or loose bolts, rivets or fastenings;

(iv) Defective ropes; or

(v) Any other structural defect.

(2) Ladders shall be inspected for defects before each day's use, and after any occurrence, such as a fall, which could damage the ladder.

(j) Ladders shall be used in the following manner:

(1) Ladders shall be securely positioned on a level and firm base.

(2) Ladders shall be fitted with slip-resistant bases and/or be positively secured or held in place to prevent slipping or shifting while in use.

(3) Except for combination ladders, self-supporting ladders shall not be used as single straight ladders.

(4) Unless intended for cantilever operation, non-self-supporting ladders shall not be used to climb above the top support point.

(5) Ladders shall not be used:

(i) As guys, braces or skids; or

(ii) As platforms, runways or scaffolds.

(6) Metal and wire-reinforced ladders (even with wooden side rails) shall not be used when employees on the ladder might contact energized electrical conductors.

(7) Individual sections from different multi-sectional ladders or two or more single straight ladders shall not be tied or fastened together to achieve additional length.

(8) Single rail ladders (i.e. made by fastening rungs or devices across a single rail) shall not be used.

[62 FR 40202, July 25, 1997, as amended at 65 FR 40944, June 30, 2000]

§ 1918.25 Bridge plates and ramps (See also § 1918.86).

(a) *Bridge and car plates (dockboards).* Bridge and car plates used afloat shall be well maintained and shall:

(1) Be strong enough to support the loads imposed on them;